NIDIFICATION OF THE PASSERINE BIRDS OF HISPANIOLA

BY JAMES BOND

WHEN I began my survey of the avifauna of the West Indies in 1927 very little was known of the nesting habits of the birds of Hispaniola, and I tried to fill this gap during the nine months that I spent on the island. It seemed especially important to secure information on the nesting of the endemic species, all of which I encountered in the field and most of which I collected. It must not be forgotten that the instinct to construct a particular type of nest is inherited, just as structural and color characters are; and although rarely mentioned by systematists, the type of nest is, I believe, frequently more indicative of relationships than anatomical characters are.

This paper deals only with the Passeriformes, not only because birds of this order are the least known, but also because their nesting habits (with a few exceptions) are of greater taxonomic significance. For example, the nidification of the continental *Schiffornis turdinus* indicates that this peculiar species is a member of the suborder Mesomyodi and should probably be referred to the Cotingidae. Griscom (1932:277) writes that "the characters which make it a member of the Mesomyodi are only assumed" and that "in life *Schiffornis* is thrush-like in habits and appearance." But no thrush that I know of builds a nest or has eggs resembling those of *Schiffornis*. Again, nests and eggs of the peculiar family Pteroptochidae suggest relationships with the New Zealand "wrens" (*Xenicus,* etc). As an example among non-Passerine families, I believe that a comparative study of nidification of the swifts will prove particularly helpful to systematists.

After examination of hundreds of nests of West Indian birds from all parts of the region, I have reached the following conclusions:

(a) Quite distinct or at least not strictly representative species of the same genus usually build distinctive nests (e.g. *Elaenia martinica, E. flavogaster, E. fallax*).

(b) Representative species and subspecies build similar types of nests, and the eggs are usually similar. There is more individual than subspecific variation in nest construction.

(c) In the West Indies many of the rarer passerine species lay not more than two eggs, the common species seldom less but rarely more than three. In the Greater Antilles, certain genera (e.g. *Myiarchus, Corvus*) frequently, if not habitually, lay four eggs.

(d) In southern Haiti the breeding season of most of the rarer passerine birds is toward the end of the first rainy season (May and June), and but one brood is raised annually. The season is not nearly so definite with the commoner species, some of which (e.g. *Coereba,*

Tiaris) may be found nesting at any season of the year, and they probably rear two broods. Birds apparently nest earlier in northern Haiti than in the south.

Annotated List *

Gray Kingbird, *Tyrannus dominicensis dominicensis*

The Gray Kingbird habitually lays three eggs in Hispaniola. A few nests were found with one or two eggs, but these were probably incomplete or may have represented a second laying. Nests found from April 18 to June 1.

Loggerhead Flycatcher, *Tolmarchus caudifasciatus gabbii*

This flycatcher builds a flimsy, cup-shaped nest like that of the Gray Kingbird. One nest, which I found near Kenscoff, contained two heavily incubated eggs, which were unfortunately broken when an attempt was made to collect them. Mr. George Smooker of Trinidad has a set of three eggs that was taken in Haiti by Dr. J. G. Myers, formerly of the Imperial College of Tropical Agriculture in Trinidad. These eggs he describes (in a letter) as follows: "ground a medium cream color; upper markings umber-brown of rather varying shades, splashed and scattered irregularly over the surface of the shell, but more pronounced at the larger end where a very few black hair lines and dots are apparent; underlying markings lavender-grey, not profuse (23.5 x 17.5; 24.6 x 18.2; 24 x 18 mm.)."

The nidification of *Tolmarchus* indicates close relationship with *Tyrannus* but not with *Pitangus* (*sulphuratus*) which builds a large, untidy globular structure with the entrance near the top (Belcher and Smooker, 1937:234). In the latest review of the Tyrannidae (Hellmayr, 1927) the genus *Tolmarchus* is far removed from *Tyrannus,* being placed next to *Pitangus.* From a morphological viewpoint alone, the relationship of *Tolmarchus* with *Tyrannus* seems to me at once apparent. The bill, particularly that of the Bahaman race (*bahamensis*), resembles that of *T. melancholicus.* The color pattern of *Tolmarchus,* especially the dark pileum and whitish tip of the tail, reminds one of our Eastern Kingbird (*T. tyrannus*). Incidentally, its rather harsh chattering notes are also reminiscent of this well known species. Nests found from May 14 to July 12.

Stolid Flycatcher, *Myiarchus stolidus dominicensis*

The nidification of the Stolid Flycatcher resembles that of others of the genus. Nests found in Hispaniola and on Gonave Island were placed in cavities in trees or cacti. One nest contained shed snake skin, a material often found in nests of the northern *M. crinitus,* and also

* Description of nests and eggs are supplementary to those given in Wetmore and Swales (1931) and in Bond (1936). Precise nesting dates pertain to nests, found in Hispaniola or on Gonave Island, that contained eggs unless otherwise stated.

noted in nests of *M. tyrannulus,* although not in those of *M. validus* and *M. barbirostris,* both of Jamaica, probably because snakes are almost extinct in Jamaica, where I saw only one snake (*Epicrates subflavus* Stejneger), which had been caught by a native near Morant Bay. Eggs (3 to 4) of the Stolid Flycatcher are strikingly marked. Except that they are, of course, decidedly smaller, they are like those of *M.* (*Hylonax*) *validus.* Nests of *Myiarchus* likewise resemble those of *M.* (*Hylonax*) *validus.*

In Haiti I have found *M. stolidus* nesting at an altitude of about 5,000 feet. The Jamaican race (*M. s. stolidus*) is, however, confined to the lowlands, being replaced in the mountains by *M. validus.* Nests found from May 9 to May 31.

Greater Antillean Pewee, *Contopus caribaeus hispaniolensis*

The West Indian pewees are usually placed in the genus *Blacicus,* but I am of the opinion that they should be included in the more widespread *Contopus.* They have been placed by systematists next to *Myiarchus,* but the nidification does not indicate close relationship.

Nests and eggs of the pewee from Hispaniola resemble those of the common Wood Pewee (*C. virens*) of eastern North America. The nests are saddled on the limbs of trees or bushes, often within reach of the ground. The eggs (2 to 3) are frequently heavily wreathed about the middle or widest part, a characteristic of those of *C. virens.* Nests found from May 28 to June 12.

Greater Antillean Elaenia, *Elaenia fallax cherriei*

The nidification of this flycatcher indicates conspecific relationship with the Jamaican *fallax.* The nests are bulky cups of moss, heavily lined with feathers, and are very different from those of either *E. martinica* or *E. flavogaster.* As far as known, both forms of *fallax* lay but two eggs. A single egg from Haiti measures 18.8 x 14.5 mm. Nests found in Haiti were situated from about 6 to 30 feet above the ground. Known breeding dates: May 12 (hatching) to June 4 (laying).

Eggs of the West Indian *Elaeniae* resemble those of *Empidonax,* a genus now placed in a different subfamily (*Myiarchinae*). And the Caribbean *Elaenia* (*E. martinica*) reminded me in the field of the Alder Flycatcher (*Empidonax traillii*), its song and call-note being much like those of this well known species.

Antillean Cliff Swallow, *Petrochelidon fulva fulva*

For an account of the nesting habits of *P. f. fulva* in Hispaniola see Wetmore and Swales (1931:319). This swallow lays two or three eggs.

As far as I am aware the only swallows in North or Middle America that build nests of mud and lay spotted eggs are those of the genera *Hirundo* and *Petrochelidon,* which are evidently related and

probably of Old World origin, although they are not placed together by Hellmayr (1935). Incidentally, it seems to me clear that if the South American swallow known as *Petrochelidon andecola* should prove to build a mud nest and to lay spotted eggs its inclusion in the genus *Petrochelidon* is correct. If, on the other hand, the nidification of this bird should prove to be like that of other American swallows it would indicate that it should be referred to the genus *Haplochelidon,* proposed for this species by Todd in 1929. Nests found from April 24 to July 6.

Golden Swallow, *Lamprochelidon euchrysea*

The nesting habits of the Hispaniolan Golden Swallow (*L. e. sclateri*) resemble those of *Iridoprocne* and *Callichelidon.* Some nests are built under the eaves of houses (at Furcy and at Kenscoff), others in tree cavities such as old woodpecker holes. Three white eggs are laid. Breeding dates: June 6 (egg and young) to June 12 (young).

Purple Martin, *Progne subis dominicensis*

This martin has been found nesting in Hispaniola in old woodpecker holes and under the eaves of houses, but eggs have not been collected on the island. Nests found from March to June.

White-necked Crow, *Corvus leucognaphalus leucognaphalus*

I found a nest of this crow near Bois Laurence on May 2. It was placed in a crotch of a pine which I could not climb. The eggs (3 to 4) were taken by Gundlach in Puerto Rico. They resemble those of other crows.

Palm Crow, *Corvus palmarum palmarum*

Nests and eggs of this locally abundant bird resemble those of other crows. Its eggs (4) are, of course, smaller than those of *C. leucognaphalus.* Nests found from April 24 to May 21.

Northern Mockingbird, *Mimus polyglottos orpheus*

The North and Middle American (including West Indian) genera of Mimidae lay immaculate greenish blue eggs, the exceptions, as far as known, being *Mimus, Nesomimus, Oreoscoptes* and *Toxostoma* (except *T. crissale*). In regard to eggs of *Toxostoma,* Oates (1905:86) states that, starting with *T. rufus* of the eastern United States, birds of this genus lay eggs that become progressively bluer as we proceed westward, the series culminating in the immaculate greenish blue egg of *T. crissale.* Eggs of the Mexican species (*T. guttatum* and *T. ocellatum*) have not been described.

The systematic arrangement of this family might well be modified by reference to nidification. Thus *Dumetella* would not be inserted between *Mimus* and *Toxostoma,* as was done in the 1931 A.O.U. Checklist, but would be placed next to the Mexican *Melanoptila.*

The Northern Mockingbird lays three or four eggs in Hispaniola. Nests found from March to July.

Pearly-eyed Thrasher, *Margarops fuscatus fuscatus*

Not definitely recorded from the mainland of Hispaniola, although known to inhabit Beata Island, off the south coast of the Dominican Republic. Nests have been found on other islands of the West Indies.

La Selle Thrush, *Turdus swalesi*

Nests of the La Selle Thrush are placed in bushes at low or moderate elevations above the ground. They are bulky cups of grasses, covered externally with moss so that they appear, until taken apart, to be constructed entirely of the latter material. The eggs are "robin's-egg blue," rather evenly spotted with greyish brown and lavender-grey. They are characteristic of *Turdus,* and are quite different from those of *Mimocichla.* Incidentally, *T. aurantius* of Jamaica, believed to be the nearest relative of *T. swalesi,* lays eggs strikingly similar to the putty-colored examples (see below) of *Mimocichla.* Nests found from May 20 (a deserted nest) to June 9 (nest under construction).

Red-legged Thrush, *Mimocichla plumbea ardosiacea*

I feel very strongly that *Mimocichla* should be placed next to or near *Turdus,* although Hellmayr (1934) places it far from this genus, with the solitaires (*Myadestes*) in between. The most important generic characters of *Mimocichla,* separating this genus from *Turdus,* are the graduated tail and distinctive color pattern.

Nests found at high elevations in Haiti are constructed of grass and moss, and are virtually indistinguishable from those of the La Selle Thrush, but the eggs (2 to 3) are quite different. They are greenish white, heavily and handsomely marked with dark brown. Strangely enough, eggs from elsewhere in the West Indies have a putty ground color. Nests of the Red-legged Thrush, found at low elevations, are constructed almost entirely of grass. Nests found from May 14 to May 31.

Antillean Solitaire, *Myadestes genibarbis montanus*

The solitaire has not yet been found nesting in Hispaniola. For an account of the nidification of this species in Jamaica and in Dominica see Bond (1936:290, and 1941:373).

Palm Chat, *Dulus dominicus*

For an account of the nesting of this interesting bird see Wetmore and Swales (1931:347). (A life history study of the Palm Chat would be of considerable interest and comparatively simple to make since the species is found abundantly in and near Port-au-Prince and the large communal nests can be located with ease.) Breeds mainly from March to June (Wetmore and Swales, 1931).

Thick-billed Vireo, *Vireo crassirostris tortugae*

In habits, song, and nesting this vireo resembles the North American White-eyed Vireo (*V. griseus*), but the eggs (2 to 3) are generally more heavily marked than those of the northern species. The height of

the breeding season is apparently in March, since I found on Ile La Tortue as many as five nests that contained either eggs or young during the latter part of this month. The species is not known from Hispaniola proper, but is found virtually throughout the Bahama Islands (*V. c. crassirostris*).

Flat-billed Vireo, *Vireo nanus*

The Flat-billed Vireo evidently lays only two eggs, which are nearly, or quite, immaculate. Measurements of one set were 19 x 13.4, and 18.2 x 13.3 mm. Nests found from May 19 (eggs about to hatch) to May 21 (eggs slightly incubated). On March 12 in northern Haiti, near Port de Paix, I secured a male in breeding condition—which would indicate that this vireo nests at an earlier date in this section.

The Flat-billed Vireo is related to and representative of *V. modestus* of Jamaica (Bond, 1934). Both species sing on the nest.

Black-whiskered Vireo, *Vireo altiloquus altiloquus*

Many nests of this vireo were found on Gonave Island in late May. Nests and eggs (3) resemble those of the North American Red-eyed Vireo. Nests found from May 19 (with young) to July 20.

Some time ago the nest and eggs of a vireo, believed to have been "*Vireosylva caymanensis*" (= *Vireo magister caymanensis*), were described by Savage English (1916:28). This is the only species of the *Vireosylva* group other than *V. a. altiloquus* among indigenous West Indian birds. English's record I consider open to question, since he made no mention of *V. crassirostris* and showed his unfamiliarity with the vireos by stating that "*Vireo caymanensis* is very probably the real singer of the song attributed to *Melopyrrha taylori*." However, the nest he described was undoubtedly that of a vireo (probably *V. crassirostris,* since the nest was situated only three feet above the ground). Recently I received from Bonaco Island, Honduras, a nest and egg of *Vireo m. magister,* the only vireo known to inhabit this island. The nest resembles that of *altiloquus,* but the egg, possibly abnormal, is immaculate, except for some minute specks at the larger end.

Bananaquit, *Coereba flaveola bananivora*

The large globular nest of this abundant species is usually placed at a low elevation in bushes or among vines. The nest is utilized not only for breeding but also for roosting (Wetmore and Swales, 1931:364). I have never seen more than three eggs in a clutch. There is no definite breeding time; nests are found virtually throughout the year anywhere in the West Indies. Nests found in the study area from January to July.

Golden Warbler, *Dendroica petechia albicollis*

This Golden Warbler has not yet been found nesting. Nests and eggs that I have examined of other West Indian forms resemble those of northern Yellow Warblers.

Pine Warbler, *Dendroica pinus chrysoleuca*

This common warbler of the pine forests of Hispaniola has not as yet been found nesting on the island.

I have stated (1936:313) that the song of the Pine Warbler is "easily distinguishable" from that of *D. pityophila*. This is indeed true of the North American and Bahaman races, but in the spring of 1941, after visiting the haunts of *D. pityophila* earlier in the year, I heard the song of the Pine Warbler in the forests of La Selle, and I was forcibly struck with its resemblance to that of *D. pityophila*. Known breeding date: May 15 (female with newly formed egg).

Gray-breasted Ground Warbler, *Microligea palustris palustris*

Two nests of this warbler were found on the summit of Morne Tranchant (about 5,900 feet). Both were situated near the ground, one in a very dense bush, the other in a blackberry thicket. The eggs are unlike eggs of *Geothlypis,* believed to be the genus most nearly related to *Microligea,* being more like those of the Cuban warblers of the genus *Teretistris* in having a decidedly greenish background. Though of course much smaller than eggs of *Phaenicophilus,* they resemble them in color. I shot one of the birds on the nest, a most unpleasant thing to have had to do, but essential, since I had previously collected both this species and *M. montana* in this locality, and it was necessary to be absolutely certain of identification. Measurements of a set are 19.5 x 14.7 and 19.7 x 14.8 mm. Nests found from May 31 to June 1.

White-breasted Ground Warbler, *Microligea montana*

The nest and eggs are unknown. It would be interesting to compare them with those of the preceding form, since the two species are not geographically representative of each other. Specimens taken in the Massif de la Selle in early June were in breeding condition.

It is noteworthy that no Antillean warblers are known to nest on the ground as many Central and South American species do.

Antillean Euphonia, *Tanagra musica musica*

This species has been found nesting in St. Lucia (*T. m. flavifrons*) and in Trinidad (*T. m. intermedia*). The euphonia evidently breeds early in Hispaniola, for in Haiti I collected males with enlarged testes as early as April.

The nidification of *Tanagra* is not characteristic of the Thraupidae. The nests are more or less globular in shape and the eggs finch-like. Some South American species (e.g. *T. laniirostris, T. violacea, Chlorophonia cyanea*) habitually nest on the ground, in the side of a bank.

Hispaniolan Golden Tanager, *Spindalis dominicensis*

Seven nests were found. These were placed in bushes at low or moderate elevations (from 3 to 15 feet) above the ground. They are

composed entirely of dry grasses, are always rather loosely constructed, and are sometimes surprisingly small.

Eggs (2 to 3) of this species vary greatly in color and markings. Those of a set collected measure 23.4 x 16.6, 22.5 x 16.3, and 22.9 x 16.8 mm. Nests found from May 14 to June 10.

Black-crowned Palm Tanager, *Phaenicophilus palmarum*

Nests were found in low bushes three to six feet above the ground, but the majority of individuals undoubtedly build in trees. The nests are deep cups, not unlike those of the Scarlet Tanager (*Piranga olivacea*); they are neater and more strongly built than nests of *Spindalis*. The eggs (2 to 3) show much variation both in color and in size; measurements vary from 23.6 x 17.6 to 27.8 x 18.1 mm.

When examining a nest found on Morne Tranchant, I was astonished at the concern of one of the parent birds, presumably the female, which approached within a few inches of my hand, complaining vociferously, although at the time her eggs were fresh. The species is usually rather shy. Nests found from May 13 to June 8 (nest under construction). A nest, containing three young, that I found near Caracol in northern Haiti on April 28, 1928, almost certainly belonged to this species.

Gray-crowned Palm Tanager, *Phaenicophilus poliocephalus coryi*

I found about 15 occupied nests of this tanager on Gonave Island. They were situated at from 4 to 30 feet above the ground, and they resemble those of *Ph. palmarum*. The eggs (2 to 4) vary considerably in color. As with nests of the Scarlet Tanager, it is sometimes possible to see the eggs from below. Nests found from May 14 to June 26.

Chat Tanager, *Calyptophilus frugivorus tertius*

Although the Chat Tanager is common on Gonave Island (*C. f. abbotti*), no nests were discovered during May and June. The birds did not appear to be in full breeding condition but were found for the most part in pairs. Male Chat Tanagers (*C. f. tertius*) with much enlarged testes were, however, taken in the Massif de la Selle in early June. No certainly authentic nest was discovered, although a single nest, containing one addled egg (23.6 x 18.3 mm.) that I found on Morne Tête-bois-pin (also known as Morne Découverte) near Morne Tranchant, probably pertained to this species. This nest (found June 14) was situated in a fern about two feet above the ground, bordering a blackberry patch. There was a protesting pair of Chat Tanagers a few yards from the nest, so that it is likely that there were young nearby.

I believe that the genus *Calyptophilus* is related to the continental *Rhodinocichla*, the nidification of which is unknown.

Tawny-shouldered Blackbird, *Agelaius humeralis*

No nest of this well known Cuban species has been found in Hispaniola. Known breeding date: July 9 (young out of nest).

Village Weaver, *Ploceus cucullatus cucullatus*

An introduced species, locally common in Haiti. On one occasion, at Basin Generale, I observed over 70 nests in a single tree. For a description of eggs taken in Haiti see Bond (1941*a*:110). Nests found August 4.

Yellow-faced Grassquit, *Tiaris olivacea olivacea*

This finch nests at low elevations in bushes and trees and not infrequently on the ground, either under the side of a bank or in the grass of a roadside pasture. As with many common West Indian birds, nests may be found virtually throughout the year. Danforth (1929:374) recorded one that contained five eggs, in the Dominican Republic, but I have never seen a clutch of more than three of either this or the following species. Known breeding dates: from May (young on wing) to August.

Black-faced Grassquit, *Tiaris bicolor marchii*

This well-known species builds its nest in Hispaniola near the ground, in bushes or ferns or among the spines in the tops of pineapple plants (Christy, 1897:324). In the Bahamas (*T. b. bicolor*) I have found nests in the fronds of palms as much as 20 feet above the ground. Known breeding dates: from May (young on wing) to August.

Greater Antillean Bullfinch, *Loxigilla violacea affinis*

I found 17 nests of this bird in Haiti during May and June, every one of which contained three eggs. Wetmore and Swales (1931:438) report that Abbott received a nest (of *L. v. maurella*) containing six eggs from a native on La Tortue, but I have no doubt that these, as they suggested, represented two separate clutches. I might mention here that I never allow natives to bring me nests and eggs that they have found. I always require that they not only show me the nest *in situ* but also the parent bird on the nest.

Nests found in Haiti were placed either on the ground or as high as 10 feet above the ground, in bushes. Most of the nests were domed, with the entrance at the side, but some had the entrance near the top, and one nest, which contained a full set of eggs (3), was cup-shaped. But the nest is always bulky. It is composed in the mountains very largely of moss; in low arid sections, where moss is not available, of dry grasses. Measurements of a set of eggs of *L. v. affinis* are 20.8 x 16.8, 21.7 x 16.5, and 21 x 16.9 mm. All eggs examined had a very pale bluish-white background (not dull white as in those of the Lesser Antillean *L. noctis*). Nests found: *L. v. affinis,* from May 12 to June 25;

L. v. parishi, May 15; *L. v. maurella,* from March 19 (not "May 19" as stated by Wetmore and Swales, (1931:438) to June 20.

Antillean Goldfinch, *Loximitris dominicensis*

Though all nests that I have found of this species were situated in low bushes or small pines, I think it likely that many are placed high in the pines. They are very neat and compact cups composed entirely of moss. Eggs of one set taken measure 18.5 x 13.7, 18.2 x 13.8, and 18.2 x 13.5 mm. Eggs found from June 2 (eggs heavily incubated) to June 12 (fresh eggs).

White-winged Crossbill, *Loxia leucoptera megaplaga*

A small series that I collected near Morne Cabaio (southeastern Haiti) in June, 1930, had very small gonads. In the Dominican Republic, young that had recently left the nest were collected in March, so it would appear that this crossbill breeds very early in the year.

Grasshopper Sparrow, *Ammodramus savannarum intricatus*

Although nests have been found of both the Jamaican and Puerto Rican races, the nest of the Hispaniola race is still unknown. It is doubtless similar to those of other forms of this well-known species. A young bird in juvenal plumage was taken on February 1 (Wetmore and Swales, 1931:443).

Andean Sparrow, *Zonotrichia capensis antillarum*

No nest with eggs has been found of this race, which is known only from the Dominican Republic. The nest presumably resembles those of other forms of this widespread tropical American species. Female observed gathering nest material May 19 (Wetmore and Swales, 1931:446).

Most West Indian Fringillidae have eggs that are of little value in indicating relationship. A noteworthy exception is the egg of the Antillean Saltator; this is truly distinctive in color and markings, and agrees in these respects with eggs of extralimited species (namely *S. atriceps, S. maximus, S. coerulescens, S. orenocensis* and *S. aurantiirostris*).

Literature Cited

Belcher, Charles, and G. D. Smooker
1937 Birds of the colony of Trinidad and Tobago (Pts. 5 and 6). *Ibis,* 1937: 225–249, 504–550.

Bond, James
1934 The systematic position of *Lawrencia* and *Laletes*. *Proc. Acad. Nat. Sci. Phila.,* 86:399–402.
1936 Birds of the West Indies, Philadelphia.
1941*a* Some West Indian birds' eggs. *Auk,* 58:109.
1941*b* Nidification of the birds of Dominica, B.W.I. *Auk,* 58:364–375.

Christy, Cuthbert
1897 Field-notes on the birds of the island of San Domingo. *Ibis,* 1897: 317–343.

Danforth, Stuart T.
1929 Notes on the birds of Hispaniola. *Auk,* 46:358–375.
Griscom, Ludlow
1932 Distribution of bird-life in Guatemala. *Bull. Amer. Mus. Nat. Hist.,* 64.
Hellmayr, Charles E.
1927 Catalogue of the birds of the Americas and the adjacent islands. *Field Mus. Nat. Hist.,* 13, Pt. 5.
1934 Same, Pt. 7.
1935 Same, Pt. 8.
Oates, Eugene W., and Savile G. Reid
1905 Catalogue of the Collection of birds' eggs in the British Museum, Vol. 4, London.
Savage English, T. M.
1916 Notes on some of the birds of Grand Cayman, West Indies. *Ibis,* 1916: 17–35, pl. 1.
Wetmore, Alexander, and Bradshaw H. Swales
1931 The birds of Haiti and the Dominican Republic. *U. S. Nat. Mus. Bull.* No. 155.

Academy of Natural Sciences of Philadelphia

Joseph Grinnell's Philosophy of Nature. Selected Writings of a Western Naturalist. University of California Press, Berkeley, 1943: 6 x 9¼ in., xv + 237 pp., 2 col. pls., 6 photos., 5 maps and figs. $2.00.

The late Joseph Grinnell's many admirers will be glad to learn that the University of California has brought out in an attractive volume a collection of twenty-eight of his scientific papers. These appeared originally in a variety of publications, and many of them were quite inaccessible to the present generation of natural history students. The papers, which are arranged chronologically, cover the period from 1903 to 1936, and are well chosen to illustrate the work of this great naturalist at its best. The very titles challenge our attention: 'The Museum Conscience,' 'Conserve the Collector,' 'Sequestration Notes,' 'The Principle of Rapid Peering, in Birds.' There are 13 maps, diagrams, and pictures, three of them in color, and an ably written preface by Grinnell's student and successor, Alden H. Miller.

This volume reminds us that Joseph Grinnell was not only an unusually competent and active administrator, teacher, editor, and investigator, but also an original thinker and a clear and forceful writer.—J. Van Tyne.